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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,978	12/13/2004	Jorg Hoffmann	BOE01 059	3430
7590		06/14/2007		
Mark C Comtois Duane Morris Suite 700 1667 K Street N W Washington, DC 20006			EXAMINER CAZAN, LIVIUS RADU	
			ART UNIT 3729	PAPER NUMBER
			MAIL DATE 06/14/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

ED

Office Action Summary

Application No.

10/500,978

Applicant(s)

HOFFMANN ET AL.

Examiner

Livius R. Cazan

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/01/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The abstract of the disclosure is objected to because it is not very descriptive. Correction is required such that the abstract summarizes the invention in more detail. See MPEP § 608.01(b).
3. The disclosure is objected to because of the following informalities: the specification should not contain any references to the claims (see first paragraph on page 1, fourth paragraph of page 2, fourth paragraph of page 3. Further, on page 3, last paragraph, line 8, "longer required" should read --longer required.--. On page 5, third paragraph, last line, "pattern.." should read --pattern.--. On page 5, fourth paragraph, line 2, "42" should probably read --47--. On page 7, step 4, "41" should probably read --47--. On page 8, second paragraph, line 7, "bearing.." should read --bearing.--

Appropriate correction is required. Applicant is asked to carefully read the specification and correct these any other informalities that may still be present.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 3729

4. **Claims 10-17** are rejected under 35 U.S.C. 102(e) as being anticipated by Narita (US6502990).

Regarding claims 10, 11, and 14-17, with reference to Fig. 1, Narita discloses a hydrodynamic bearing arrangement for an electric motor comprising a stator (2), a rotor (1), a shaft (10) and the hydrodynamic bearing arrangement, which rotatably supports the rotor with respect to the stator, the hydrodynamic bearing arrangement having a bearing sleeve (21), an axial ring (30) being mounted onto one end of the shaft (10) and the shaft (10) being inserted into the bearing sleeve (21); the corresponding end of the bearing sleeve (21) being sealed with a counter disk (40); bearing fluid being inserted into the bearing gap (see col. 4, Ins. 9-12) between the shaft (10) and the bearing sleeve (21), and the unit thus formed from the hydrodynamic bearing arrangement and the shaft forming a fully functional unit that can be tested and mounted onto the stator or the rotor. Such an electric motor can be mounted in a hard disk drive (see col. 3, Ins. 39-46).

The stator or the rotor is firmly fixed to the outer surface of the bearing sleeve (see Fig. 1). The hydrodynamic bearing arrangement is fixedly connected to the rotor or the stator. A groove (see col. 4, Ins. 11-20 and 35-44) is provided on at least one of the bonded contact surfaces of either the bearing arrangement or the stator or the rotor.

Regarding claims 12 and 13, the patentability of a product does not depend on its method of production. In re Thorpe, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985) (citing In re Pilkington, 411 F.2d 1345, 1348, 162 USPQ 145, 147 (CCPA 1969)). If a product in a product-by-process claim is the same as or obvious from a

Art Unit: 3729

product in the prior art, the claim is unpatentable even though the prior product is made by a different process. *Id.* citing *In re Marosi*, 710 F.2d 799, 803, 218 USPQ 289, 292-93 (Fed. Cir. 1983); *Johnson & Johnson v. W.L. Gore*, 436 F. Supp. 704, 726, 195 USPQ 487, 506 (D. Del. 1977); see also *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Therefore it does not matter when the shaft is inserted into the bearing sleeve. Also, depending on the tolerance of the parts to be mated, a transition fit can be indistinguishable structurally from an interference fit (i.e press-fitting or shrink-fitting; see col. 3; Ins. 52-56), and the method of obtaining the fit is therefore irrelevant.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. **Claims 1-4, 6-9, and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Narita.

Regarding claims 1-4, 6, 8, and 9, as discussed above, Narita discloses the same structure as the Applicant. Clearly, the bearing sleeve has been manufactured, the axial ring has been fixed to one end of the shaft, the shaft and the axial ring have been inserted into the bearing sleeve, one end of the bearing sleeve has been sealed with the counter disk, and bearing fluid has been inserted into a bearing gap between the shaft and the bearing sleeve. The shaft has been fixedly connected to the hub of the rotor, after which the unit consisting of the rotor hub, shaft, and bearing sleeve was fixedly mounted with respect to the stator. See the rejection under 35 U.S.C. 102(e) above, as well as Fig. 1.

However, Narita does not disclose testing the thus formed assembly before installing it into the spindle motor, nor performing such testing after having connected the shaft to the rotor.

It is very well known to test components prior to further processing, in order to reduce manufacturing costs by discarding defective components prior to performing further manufacturing steps. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to test the bearing assembly prior to mounting it into the stator, in order to avoid wasting manufacturing resources. A defective bearing assembly installed in a good disk drive results in a defective drive, which is a waste of time and materials. Further, it would have been obvious to one of ordinary skill in the art to perform such testing either prior to, after, or both prior to and after assembling the

Art Unit: 3729

shaft to the rotor, in order to eliminate defective components as early as possible during the manufacturing cycle.

Regarding claims 7 and 13, Narita discloses substantially the same invention as the Applicant. Narita discusses press-fitting or shrink-fitting the bearing sleeve within the stator assembly (see col. 3, Ins. 52-56).

In the art, there are several well-known methods of fitting two parts to be mated: clearance fit, transition fit, and interference fit. At the time the invention was made, one of ordinary skill in the art would have found it obvious to utilize an appropriate type of fit between the bearing arrangement and the stator (such as a transition fit), so as to efficiently fasten the bearing arrangement and the stator. One of ordinary skill in the art would have found it obvious to optimize the tolerance range for each of the parts to be mated such that the resulting fit is effective.

8. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Narita in view of Hoffmann (US6566776 to Hoffmann et al.).

Narita discloses the same invention as the Applicant, except for the adhesive utilized to bond the shaft to the rotor being an adhesive with low gas emission properties.

Hoffmann teaches that in hard disk drives it is disadvantageous to utilize adhesives which give off gasses, since the gasses can deposit on the storage disks. Therefore, Hoffmann teaches utilizing adhesives with low gas emission properties. See col. 1, Ins. 14-24. See col. 2, Ins. 1-17.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize such an adhesive in order to prevent damage to the data storage disks.

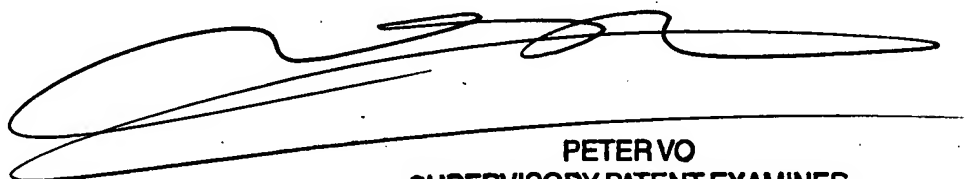
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Livius R. Cazan whose telephone number is (571) 272-8032. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571)272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LRC/ 6/9/2007



**PETER VO
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